# Code Specification

|  |  |  |
| --- | --- | --- |
| **Nodo** | **Predicados** | **Reglas Semánticas** |
| **program** → *ast*:AST\* |  | dirAcumu = 0  Ast.forEach(ast -> if ast == defvar {ast.address = dirAcumu; dirAcumu += ast.type.size }) |
|  |  |  |
| **func**:def → *name*:String *parameter*:parameter\*  *retorno*:type *defvar*:defVar\* *sentence*:sentence\* |  | parameteri.addres = 4 + ∑ parameteri.type.size | 0 <= j < i  defVari.address = ∑ -defVari.type.size \* defVari.name.size | 0 <= j < i |
| **defVar**:def → *name*:String *type*:type |  |  |
| **parameter**:def → *name*:String *type*:type |  |  |
| **defStruct**:def → *name*:String *parameter*:parameter\* |  | Parameter(i).address =  ∑ parameter.type.size | 0 <= j < i |
|  |  |  |
| **intType**:type → λ |  | IntType.size = 2 |
| **realType**:type → λ |  | realType.size = 4 |
| **charType**:type → λ |  | CharType.size =1 |
| **arrayType**:type → *index*:int *type*:type |  | ArrayType.size = type.size \* index |
| **structType**:type → *name*:String |  | StructType.size = ∑getStruct.param.size |
| **voidType**:type → λ |  |  |
|  |  |  |
| **print**:sentence → *string*:String *expr*:expr |  |  |
| **read**:sentence → *expr*:expr |  |  |
| **assignment**:sentence → *left*:expr *right*:expr |  |  |
| **ifSentence**:sentence → *condition*:expr *iftrue*:sentence\* |  |  |
| **ifElseSentence**:sentence → *condition*:expr *iftrue*:sentence\* *else1*:sentence\* |  |  |
| **whileSentence**:sentence → *condition*:expr *sentence*:sentence\* |  |  |
| **returnNode**:sentence → *expr*:expr |  |  |
| **funcCall**:sentence → *name*:String *args*:expr |  |  |
|  |  |  |
| **exprAritmetica**:expr → *left*:expr *op*:String *right*:expr |  |  |
| **exprLogica**:expr → *left*:expr *op*:String *right*:expr |  |  |
| **exprLogicaNe**:expr → *expr*:expr |  |  |
| **acces**:expr → *left*:expr *right*:String |  |  |
| **arrayAcces**:expr → *left*:expr *right*:expr |  |  |
| **cast**:expr → *typeToConvert*:type *expr*:expr |  |  |
| **litEnt**:expr → *string*:String |  |  |
| **litReal**:expr → *string*:String |  |  |
| **litChar**:expr → *string*:String |  |  |
| **variable**:expr → *string*:String |  |  |
| **methodCallExpr**:expr → *name*:String *args*:expr\* |  |  |
|  |  |  |

## Atributos

| **Nodo/Categoría**  **Sintáctica** | **Nombre del**  **atributo** | **Tipo Java** | **Heredado/Sintetizado** | **Descripción** |
| --- | --- | --- | --- | --- |
| DefVar | Address | int | Heredado |  |
| Type | size | int | Sintetizado |  |

## Estructuras de Datos Auxiliares

| **Nombre** | **Tipo Java** | **Descripción** |
| --- | --- | --- |
|  |  |  |

## Funciones Auxiliares